КОНСОРЦИУМ ЭКОНОМИЧЕСКИХ ИССЛЕДОВАНИЙ И ОБРАЗОВАНИЯ - РОССИЯ И СНГ
ECONOMICS EDUCATION AND RESEARCH CONSORTIUM – RUSSIA AND CIS

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THE CAUSES OF DISPROPORTIONATE ANTIDUMPING

Final report

TERN – EERC
2002

TERN – EERC

ABSTRACT

THE CAUSES OF DISPROPORTIONATE ANTIDUMPING[1]

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The share of antidumping investigations against transition economies in the total number of investigations is much higher then their share in the world trade. Moreover, it increased from 20 to over than 40 percent during the last decade. There are two opposite explanations of these phenomena among economists. One group argues that such large number of antidumping investigations is caused by direct and indirect subsidies to exporters in transition economies. Others see the main cause in the inability of transition economies to protect their interests in international trade. In this paper, the authors develop an econometric model that evaluates the comparative weight of each factor that influences the antidumping activity against transition economies.

[1] The authors are grateful to the World Trade Organization for the help in data search, particularly to Joana Queiroz (Information and Media Division) and Vuddha Meach (Merchandise Trade Section Statistics Division), and also for the reports on AD investigations against Ukrainian enterprises (Committee on Anti-Dumping Practices), to Dr. Tharakan for his help in econometric specification and for the important information on data sources, to the analytic department of International Monetary Fund and to the World Bank for the data on trade volumes, to Dr Prusa for valuable recommendations regarding antidumping legislation. We also thanks Dr. Jourge Miranda for his data on AD activity for extended time interval starting from 1987. We thank International Labour Organization for the data on unemployment levels in the investigated sample. We are grateful to the US International Trade Commission for the extended reports on USA AD investigations against Ukrainian metallurgic companies. We are grateful to Economics Education and Research Consortium – Russia (EERC-R) for organizational and financial support and help with data search.

CONTENT

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PREFACE TO THE FINAL REPORT[2]

We had several major objectives while developing our preliminary investigation into the final report. First, we have tried to incorporate the experts' comments by improving econometric methodology. Second, we devoted significant efforts to gathering of industry level data. Thirdly, we performed econometric analysis at industry level and finally, we extended the analysis by making a case study of an AD investigation in USA against Ukrainian metallurgy

In our preliminary report we have made an analysis on country level data on over 100 countries. Doing the analysis we realized that there are specification problems / doubts which could only be resolved by the use of higher level of data disaggregation. In the final report we changed econometric methodology to some extent by introducing several new variables and by selecting fixed effect estimation procedure. We managed to gather data on industry level and obtained the results that are logically consistent and that are in compliance with our previous findings.

In order to verify the econometric results by the real case study and also for demonstrative purposes we conducted a case study of the United States International Trade Commission Anti-dumping Investigations Nos. 731-TA-989-908 "Hot-rolled steel products from Argentina, China, India, Indonesia, Kazakhstan, Netherlands, Romania, South Africa, Taiwan, and Ukraine" where we paid special attention to the Ukraine case. We examined in details the factors that are taken into account by domestic industry petitioners as well as by AD investigating bodies.

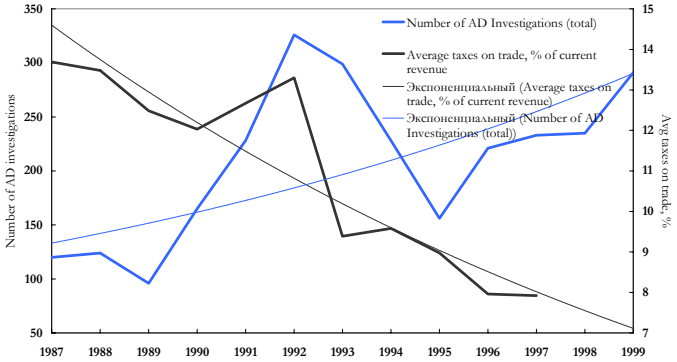
[2] Authors are particularly grateful for the valuable comments to James Leitzel, Slinko Irina, Leonid Polishchuk, Shlomo Weber, Judith Thornton

INTRODUCTION

The problem

The outburst of anti-dumping (henceforth AD) actions during the last two decades has been one of the troublesome trends in world trade. The spread of AD increased from a few traditional users, such as Australia, Canada, the EC, New Zealand and the US to a growing number of new users, among which are Argentina, Brazil, India, Korea, Mexico, Turkey, South Africa.

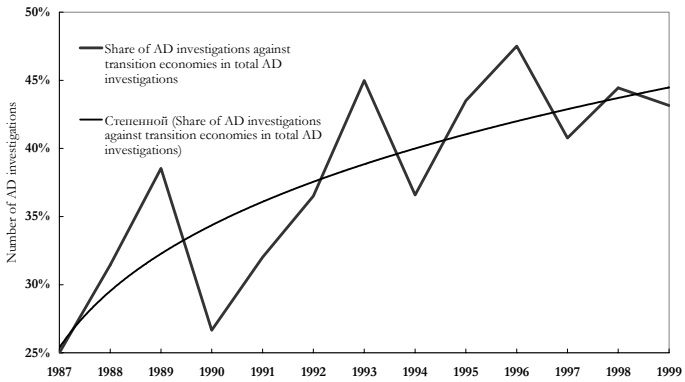
Figure 1. Protectionism and AD activity



Sources: World Bank World Development Indicators 1999; Miranda 1998 (for years 1987-1997); WTO. Reports of the Committee on Anti-Dumping Practices (for years 1997 - 1999); Autors' compilation

During the 90s the share of AD cases against economies in transition has been disproportionate to their trade volumes. Moreover, it has been growing steadily and reached 43% in 1999.

Figure 1. AD investigations against transition economies in the total number of investigations



Sources: World Bank World Development Indicators 1999; Miranda 1998 (for years 1987-1997); WTO. Reports of the Committee on Anti-Dumping Practices (for years 1997 - 1999); Autors' compilation

The literature and personal interviews with experts in the field has shown an ambiguity of assessments of disproportionate AD use against transition economies:

"AD is not being used in the spirit of the GATT rules. It is operating in practice as *de facto* protectionist device "

Hindley B. 1988, Dumping and the Far East Trade of the European Community, The World Economy

"I agree that here (*in AD use* – auth) there is a share of protectionism, lobbying of particular industries' interests, but I think that it is not determinative. The major reason is in institutions, which leads to dumping through subsidies. As a result antidumping arises."

Professor of Economics
Pennsylvania State University
Field: Institutions

"Russia and Ukraine dump. I am totally confident in that. That is why they are targeted by antidumping investigations "

Professor of Economics
Pennsylvania State University
Field: International trade

Many Ukrainian economists agree that non-market economy status was a decisive reason in the antidumping negotiation of EC commission against three producers of seamless pipes from Ukraine.

Research objectives

Given the above, the major purpose of the research is to define which of the following or which combination of the following is a source of disproportional antidumping activity: either it is tendency of targeted economies to dump often or it is protectionist nature of AD use in initiating countries and inability of targeted economies to protect their rights in the international arena or other reasons that are not related to dumping.

LITERATURE SURVEY

The debates among economists-researchers about the reasons of appearance of antidumping investigations have taken place for rather long time already. Many of scientists agree that antidumping represents one form of protectionism and most often is caused by lobbying of countries-importers' producers:

"AD is a trouble-making diplomacy, stupid economics, and unprincipled law" (Finger, 1993)

"AD is not being used in the spirit of the GATT rules. It is operating in practice as *de facto* protectionist device" (Hindley, 1988)

"Reduction of AD methods use would increase (economic) efficiency and consumers' gains in all countries" (Michalopoulos, 1999)

On the other hand there is much less unanimity about the other side of antidumping: What are the factors that determines AD activity, or in other words, why some countries are more often targeted by AD while there are few investigations against others?

Many of researchers see the weakness of the countries that cannot protect their interests in the international trade as a major source of AD susceptibility:

McGee, Yoon (1998) notes that the lack of status of market economy would allow exporter to fully protect its interests during the investigation is named the major reason for the initiation of AD investigations against China[3]).

Ehrenhaft, Hindley, Michalopoulos & Winters (1997), Finger (1993) argues that with the criterion of "non-market economy" EU and USA use

[3] The authors give several cases when AD authorities made decisions based only on the information provided by the companies-competitors of Chinese exporters.

different methods of estimation of dumping for industries of countries with transition economies.

Also the membership in WTO plays significant role for a country to prevent AD investigations against its exporters as mentioned by Prusa (1999) and Isayenko O. (2000)[4]).

Some researchers name the other reasons. A group of scientists agrees that antidumping is used mainly against those enterprises and industries, which are supported by government subsidies both direct and indirect (Goldstein, Judish L., Krasner, Stephen D. (1984), Hillman, Arye L., Ursprung, Heinrich W. (1998)).

Michalopoulos (1999) mentions that weak fundamental market institutions of targeted countries put obstacles on their way to effective integration in world trade system thus causing more AD against it.

Knetter & Prusa (2000) stresses that weakening of a targeted country's national currency influences AD authorities' decision[5]. The researchers also found that real GDP decline causes an increase in AD investigations[6].

There are also few works that aims to define the causes of AD activity using econometric tools. The papers described below played significant role in developing the research.

Two works devoted to determination of factors that influences AD activity are those of P.K.M. Tharakan, J. Waelbroek "Determinants of Anti-dumping and Countervailing Duty Decisions of the European

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[4] In his work "Antidumping as strategic behavior" Isayenko O. with the use of econometric analysis showed that countries-members of WTO are less targeted by AD investigations from their trading partners.

[5] In this work Knetter & Prusa conducted a research where they found that macroeconomic factors as a whole and real exchange rate in particular influence the probability of acceptance of both of AD investigations criteria - LTFV (less than fair value) criteria and material injury criteria. The real appreciation (depreciation) increases (decreases) the probability of injury and decreases (increases) the probability of LTFV. Empirical investigation showed that real appreciation of country-complainant national currency in size of one (two) standard deviations leads to 33% (77%) increase in AD investigations.

[6] Authors found that the fall in GDP growth by one standard deviation leads to 23% increase in number of AD investigations

Communities" and "Antidumping and countervailing duty decisions in the EC and in the US". In these works the authors use the paradigm described in the work of J.M. Finger, H. Keith Hall, Douglas R. Nelson "The Political Economy of Administered Protection" in which authors distinguish between political track variables and technical track variables that influences AD activity. Based on such segregation the authors developed the specification that allowed to make the following conclusions:

- Technical track variables dominates in LTFV pricing investigation
- Political track variables dominates in domestic industry injury investigation
- Centrally planned economies are more often targeted by AD

In our research we tried to incorporate the described in the literature numerous factors to check their significance with the use of econometric specification based on industry-level data.

THE MODEL, SPECIFICATION AND VARIABLES

Econometric model employed in the paper consists of three parts. The first one is devoted to the evaluation of factors that might influence total number of AD initiations against a particular industry. The second stage of the research involves deeper into the very nature of decision-making process of trade commissions. In particular, quantitative analysis aims at the determinants of the probability to succeed in AD investigations. Finally, since the weight of particular factors is likely to vary from dumping to injury decision, their relative importance is tested in the third stage of the quantitative analysis.

TABLE 1. Dependent variables[7]

VARIABLE	DESCRIPTION
NAD	Total number of AD investigations. Measured as sum of AD initiations against a particular industry of a particular country started by other countries in the sample in a given year.
AF_NAD	Share of affirmative decisions in the total number of investigations. Measured as simple ratio of the number of positive decisions against a particular industry of a particular country to the total number of investigations in a given year: $AF\_NAD \in [0,1]$.
DD_NAD[8]	Share of affirmative dumping decisions in the total number of investigations. Measured as a ratio of the number of dumping decisions against a particular industry of a particular country to the total number of investigations in a given year: $DD\_NAD \in [0,1]$

Before presenting formal specifications of each stage it is worth to outline briefly theoretical considerations behind the choice of the RHS variables.

[7] As it can be seen from the dependent variables description, OLS estimation procedure would produce linear probability models for all equations except one with the dependent variable NAD.

[8] AD procedure assumes the following sequence of the investigation: (1) find dumping and (2) find injury, and affirmative decision concerning AD measures is approved only if both criteria are satisfied. In this case regression for the probability of affirmative decisions would exactly reproduce the regression for the probability of injury decision, which is redundant.

Theoretical background

Although antidumping institutions including legal authorities and legislation as well as the very investigation procedures differ across countries it is possible to define a set of criteria that are more or less common. Such criteria were extensively elaborated in several theoretical and empirical investigations (see for example, Tharakan & Waelbroeck, 1992 & 1994; Finger, Hall and Nelson, 1982; etc.). In this research, there was done a trial to extend existing models in several directions without making it completely inconsistent with previously used methodologies.

The objective of the quantitative analysis presented below is to determine the influence of political and economic variables on the number of antidumping cases and probability of affirmative decision.

Industry's power. It is rational to expect that more "important" industries would be protected with greater ardor. Industry size should be a good proxy for such an "importance". That is why, using VA structures of manufacturing sector we introduce VA share as a proxy, which should positively influence both the number of investigations and the probability of affirmative decision.

Degree of involvement into the international trade. Trade pattern of the industry to be defended is expected to be important in antidumping proceedings. Clearly, the higher the imports the more protection should the industry seek and obtain. At the same time, export orientation of the domestic industry would mean that it is sufficiently competitive and requires relatively less protection, which is purely economic factor. Moreover, the more industry is export oriented the more it would be sensitive to the retaliation measures in the form of AD or other protectionist mechanisms. That is why it is rational to expect that antidumping activity would be lower for the industries having greater net exports.

Degree of support. Promotion of the industry at the international or domestic markets by the exporting country's authorities is definitely an

important factor in the AD proceedings. Highly subsidized industry would likely to be hardly attacked by its less subsidized competitors. It is important to note that relative subsidization levels are more important here than level of support in absolute value. We utilize subsidies ratio variable to take into account this factor.

Industry's development pattern. Injury criteria in the AD investigations require explicit considerations of the current conditions in the industry expected to be subject to defense. That is why we included index of industrial production into the model. At the same time, one could expect endogenouty problem, which arises because of bi-directional causality between dependent and independent variables. Namely, it is true that industry, which sits at the bottom side of the business cycle, is more likely to search for protection and, thus, is much more likely to apply with antidumping suite. However, the opposite is exactly true: if industry is successful enough in its complaints and is well protected then it would be more likely at the upsurge in production. For these reasons, index of industrial production can only be included into the specification, where probability of affirmative decision is evaluated, since the endogenouty problem here is not severe.

Status. Internationally accepted status of the affected country may be of no less importance than other mentioned parameters. In particular, WTO membership indicating general compliance of the affected country's institutions with the international principles might result in less discretionary decision-making by trade authorities. At the same time, it is important to mention two opposite effects of WTO membership. On the one hand, different procedures of AD investigations against non-market (non-WTO members) economies adds more flexibility to the decision-making authorities and, thus, ceteris paribus assuming pro-domestic their orientation, might significantly increase probability of affirmative decisions and vice versa. On the other, WTO accession significantly reduces protectionism toolkit (tariffs, quotas, etc.), thus giving more weight to the AD mechanism. Direction of influence of WTO membership would depend on which effect dominates and is subject of the research. The status of transition economy may have influence on the intensity of

AD investigations and their outcome. For instance, it might be possible that transition status is an argument for discretionary decision-making, in particular, with respect to the procedure used to evaluate dumping.

Economic conditions. Since macroeconomic conditions are likely to influence probability of affirmative decision and (to a less extent) total number of antidumping investigations it is rational to include them as control variables into econometric specifications. Among such macroeconomic parameters exchange rate (in both affected and initiating countries) and overall unemployment (in initiating country) were chosen[9].

Other control variables. Time trend should be definitely included into the econometric specification since there is an evidence of significant growth in the use of AD in the international markets[10]. However, it is not clear whether there are some dynamic tendencies in the number of successful its applications. Probability of affirmative decision is itself a correcting factor when applied to the number of AD suits. Namely, increase in the probability of affirmative decision would (1) increase expected net benefit from the suit holding expenses for its filling constant and/or (2) provide a signal about the findings of dumping for the rest of players. At the same time, increase in the number of "unjustified" complaints and correspondent quantity of initiations may reduce the probability of success measured by the ratio of affirmative decisions number to total number of investigations. Although the relationship can be more complex due to the fact that not all suits result in actual initiation, we introduce lagged value of dependent variable into one of the econometric specification specifications (see column "Results C" in the table "Main Results").

[9] Since the industry-level data on unemployment was unavailable we used country-level index as a proxy.

[10] This growth can be attributed to two factors: (1) more intensive application of AD by its traditional users and (2) increase in the number of countries, which start AD activity recently.

TABLE 2. Explanatory variables[11]

VARIABLE	DESCRIPTION
T	The variable accounts for the possible time trend in the development of dependent variable: $t \in [1,5]$.
AF_NAD	The variable is the same as described above except now it serves as an explanatory variable in the first stage of the quantitative analysis. AF_NAD(-1) represents lagged value of the variable.
SR	Subsidies rate. The variable measures the degree of industry's support by governments in affected and in country(ies) initiator. It is calculated as ratio of subsidies in affected country (% of GDP) to the subsidies in countries trade-partners (% of GDP). Thus, the variable increases with the increase in affected country industry's support and with fall in initiating countries industry's support.
LHW_D	Wages differential. The binary variable takes the value 1 IF the industry's wage in affected country is lower than average for the industry (across all countries in the sample) in a given year AND IF the industry's wage in initiating country(ies) is higher than average.
REERCH & TP_REERCH	Change in the real effective exchange rate of affected/initiating country(ies) over previous period. Positive change indicates affected/initiating country's currency real appreciation.
WTO	WTO membership. The binary variable takes the value 1 if affected country is a WTO member and 0 otherwise.
TRANS	Transition country. The binary variable takes the value of 1 if the affected country is transition according to the WB classification.
TP_VAS	Value added structure in manufacturing sector of initiating country. Measured as share of the industry's VA in total VA of manufacturing sector: $TP\_VAS \in [0,1]$.
TP_NEXP	Net export of the initiating country. Measured as the industry's export minus import.
TP_UNEMP	Deviation of the unemployment rate in the initiating country from the average unemployment rate across all countries in the sample
TP_IPI	Industrial production index for the initiating country(ies). Index with the value for 1995 equal to 100.

The following is a formal representation of the three econometric specifications used in the research:

[11] Initial set of explanatory variables was significantly larger. Since information on some indicators like capital/labor ratio, industry's employment ratios, volume of non-monetary transaction and indirect subsidies levels as well as industry concentration ratios is

Stage 1.

$$NAD = f(t, AF\_NAD, SR, LHW\_D, REERCH, WTO, TRANS, TP\_VAS, TP\_NEXP, TP\_UNEMP, TP\_REERCH, TP\_IPI) \quad (1)$$

Stage 2.

$$AF\_NAD = f(t, AF\_NAD, SR, LHW\_D, REERCH, WTO, TRANS, TP\_VAS, TP\_NEXP, TP\_UNEMP, TP\_REERCH, TP\_IPI) \quad (2)$$

Stage 3.

$$DD\_NAD = f(t, AF\_NAD, SR, LHW\_D, REERCH, WTO, TRANS, TP\_VAS, TP\_NEXP, TP\_UNEMP, TP\_REERCH, TP\_IPI) \quad (3)$$

Each of the equations (1) – (3) are estimated using cross-sectional time-series (panel) dataset. Estimation is based on fixed-effect procedure provided by computer software Stata Intercooled 6.0.

The data

Data set is represented by balanced panel with time-series component covering 1995-1999. Cross-sectional component of the panel includes 253 observations: 23 country and 11 two-digit (NACE classification). Below the list of countries and industries is presented.

Table 3. List of countries

COUNTRY	NAD	COUNTRY	NAD
Japan	377	Ukraine	47
Korea	313	Poland	35
United States	195	Czech Republic	27
Germany	164	Finland	20
Canada	155	Hungary	18
Mexico	141	Slovak Republic	14
Italy	123	Bulgaria	11
France	106	Denmark	10
United Kingdom	105	Austria	4
Russia	100	European Community[12]	4
Sweden	60	Slovenia	3
Romania	58		

presently unavailable such variables were either dropped or replaced by proxies mentioned in the table 2.

[12] As simple average of member-countries parameters

References on the data sources and summary statistics of the data are presented in the Appendix YYY. It is worth noting that sometimes data on variables, like VA structure of production, was retrieved using different sources (e.g. WIIW Handbook of Statistics for transition economies and STAN Database for OECD countries). Although we accept rational critique concerning possible heterogeneity of the data collection procedure by different agencies, it should be noted that thorough comparison of data for overlapping countries, like Czech Republic, gives satisfactory results and we are inclined to believe that the data from these sources can successfully be pooled together.

Table 4. List of industries

INDUSTRY TITLE	NAD	IDENTIFIER
Basic metals and fabricated metal products	1281	DJ
Chemicals, chemical products & man-made fibers	241	DG
Electrical and optical equipment	169	DL
Food products, beverages and tobacco	120	DA
Rubber and plastic products	67	DH
Textiles and textile products	58	DB
Manufacturing	42	DN
Other non-metallic mineral products	40	DI
Machinery and equipment	39	DK
Pulp, paper, & paper product; publishing & printing	17	DE
Wood and wood products	16	DD

Although selection of the quite broad industry definitions may cause some aggregation problems, this is unavoidable taking into account focus of the research and resource limitations.

Data weighting

Presence of the several trade partners as well as several AD initiators required aggregation methodology. In this research double-track weighting procedure was chosen. The applied decision rule was as follows: if NAD is greater than 0 in a given year then parameters of initiators are weighted in accordance to their contributions to NAD, otherwise parameters of the four main trade partners are chosen and weighted by the import volumes from the affected country.

RESULTS

The Table 5 "Main Results" below represents results of the econometric estimation. Technical specificity of the AD investigation, where dumping criterion is superior to the injury one, have led to the fact that affirmative decisions are exactly duplicated by the injury decisions. That is why there is no necessity in the evaluation of both probabilities (affirmative and injury decisions). Upper row of the table reproduces the dependent variable of each econometric specification.

The total number of AD investigations is growing over time and beyond the other reasons included into the model, which was tested by the time trend variable having positive and significant effect. It is not surprising taking into account gradual substitution of the traditional protectionists instruments by antidumping.

Probability of the successful completion of AD suit significantly and positively influences the total number of AD investigations, which might represent some rationality in expectations of the economic agents, real existence of dumping or implicit collusion between AD authorities and potential complainants. Lagged value of the dependent variable AF_NAD has negative and significant influence on its future value. Thus, it might be an evidence of self-correcting mechanism in the AD practice. Namely, it is possible that high share of affirmative decisions attracts new complainants seeking protection with suspicious argumentation, most of which receive negative decisions in the investigations, thus reducing share of affirmative decisions back.

Difference in the levels of industries' support in affected and initiating countries has positive and significant influence not only on the number of initiations, but also significantly increases the probability of affirmative decision. Decomposition of the dependent variable into dumping and injury criteria revealed that both are positively affected by the variable. In other words, the heavier affected country's industries are subsidized and the lower such support in the countries trade partners the more cases will be initiated and their outcome becomes less favorable for the

affected country since it is more likely to be accused in dumping and proved that this has harmed its competitor.

Difference in wage levels across affected and initiating countries industries has positive but insignificant influence on the total number of initiations as well as on their result. Having in mind the relationship between the probability of affirmative decision and satisfaction of injury criterion, coefficient analysis may lead to a proposition that wade differential is relatively more important for the injury rather than for dumping decision, which is obvious.

Appreciation (increase in REER) of the exporter's currency has negative, but insignificant effect on both the number of investigations and their results. The only marginal significance was found in the third specification on the analysis of the probability of affirmative decision (Results (C) column).

WTO membership country status was found to have insignificant influence on the number of investigations[13]. At the same time, significant positive influence of the variable on both the probability of the affirmative decision and the dumping criterion compliance may lead to a conclusion that protectionists effect outweighs the effect of presence of sound and internationally accepted trade institutions. Another possible explanation is that WTO-member status restrains potential complainants from bringing cases to courts if their justification is not sufficiently strong.

Status of transition economy is not likely to serve as an argument for the extra number of AD investigations[14]. However, its positive influence on the probability of affirmative decision as well as on the probability of finding dumping presents evidence of the discriminatory practices with respect to transition economies. It is not surprising because special treatment of the transition economies may add flexibility to the

[13] Which was the case in the country level analysis (see Appendix 3). In both specifications present and that listed in Appendix 3 the sign was negative.

[14] At the country level analysis this factor was positive and significant (Appendix 3).

procedure of investigation. As long as AD may at least partially serve as a protectionist instrument such flexibility may be used in favor of investigator thus exposing transition economy to a relatively higher rate of punishment.

Importance of the industry for the manufacturing sector of initiating country proved to have significant positive influence on the number of investigations. However, while positive it appears to be insignificant with respect to the probability of affirmative decision. Particularly strange result appears when the variable is introduced to the third stage regression. Namely, it has positive and significant at 10% critical interval influence on the probability of finding dumping.

Export orientation of initiating country negatively influences the number of investigations, thus supporting theoretical hypothesis raised in the previous section. Besides, it has positive however non-robust effect on the probability of affirmative decision and, what is interesting, positively influences the probability of finding dumping. In fact this is not unexpected since export oriented industry is more likely to be competitive and thus would involve itself in the AD investigation only having significantly strong arguments for such a case.

Relatively high level of the unemployment in the country-initiator has expected positive, but insignificant influence on the number of AD investigations and was found having no influence on the rest of dependent variables.

Appreciation of domestic currency in the countries-initiators turned out to be positively, but insignificantly related to the number of investigations and to the probability of affirmative decision. At the same time, negative influence of the strong domestic currency on the probability of finding dumping may testify for the discrepancy between the total number of cases brought to the court and those having strong background behind them.

Finally, industries' growth would result in a lower number of affirmative decisions. Taking into account insignificant influence of the industrial

performance on the dumping definition (which is obvious), this result [negative influence on the share of affirmative decisions] provided evidence that some part of the affirmative decisions is lost primary because of no finding of injury to domestic industry.

Table 5. Main Results

VARIABLE	NAD			AF_NAD				DD_NAD		
	Exp. Sign	Results (A)	Results (B)	Exp. Sign	Results (A)	Results (B)	Results (C)	Exp. Sign	Results (A)	Results (B)
Time trend	+	0.147*	0.144*	?	-0.0003			?	0.002	
std. err.		*0.040*	*0.038*		*0.005*				*0.006*	
AF_NAD	+	1.788*	1.771*							
std. err.		*0.276*	*0.274*							
AF_NAD(-1)						-	-0.173*			
std. err.							*0.034*			
SR	+	0.635**	0.506**	+	0.241*	0.241*	0.228*	+	0.309*	0.308*
std. err.		*0.261*	*0.220*		*0.029*	*0.024*	*0.027*		*0.031*	*0.027*
LHW_D	+	0.417	0.361	+	0.024		0.057***	+	0.00 8	
std. err.		*0.264*	*0.260*		*0.030*		*0.035*		*0.032*	
REERCH	-	-0.558		-	-0.076		-0.108***	-	-0.047	
std. err.		*0.466*			*0.053*		*0.056*		*0.057*	
WTO	?	-0.244		?	0.135**	0.123**	0.186*	?	0.113**	0.108**
std. err.		*0.461*			*0.053*	*0.052*	*0.060*		*0.056*	*0.055*
TRANS	?	-0.409		?	0.121*	0.123*	0.130*	?	0.099**	0.099**
std. err.		*0.401*			*0.046*	*0.044*	*0.045*		*0.049*	*0.047*
TP_VAS	+	15.262*	14.304*	+	0.473			?	0.953***	0.902***
std. err.		*4.421*	*4.349*		*0.508*				*0.539*	*0.532*
TP_NEXP	-	-0.00003*	-0.00003**	? (+)	0.000001		0.000003**	?	0.000003**	0.000003**
std. err.		*0.00001*	*0.00001*		*0.000001*		*0.000001*		*0.000001*	*0.000001*
TP_UNEMP	+	0.097		+	-0.006			?	-0.0002	
std. err.		*0.065*			*0.008*				*0.008*	
TP_REERCH	+	0.895		+	-0.152			+	-0.155	-0.164***
std. err.		*0.859*			*0.098*				*0.104*	*0. 098*
TP_IPI				-	-0.003**	-0.002**	-0.002	-	-0.001	
std. err.					*0.001*	*0.001*	*0.001*		*0.001*	
R-square (within)		0.09	0.09		0.10	0.10	0.14		0.13	0.13
R-square (between)		0.30	0.32		0.02	0.01	0.02		0.03	0.03
R-square (overall)		0.25	0.26		0.04	0.03	0.002		0.05	0.05
Number of groups		253	253		253	253	253		253	253
Observation per group		5	5		5	5	4		5	5
Total observations		1265	1265		1265	1265	1012		1265	1265
F test that all u_i=0:		*F(252,1006)=20.98; Prob>F=0.0000*			*F(252,1008)=3.64; Prob>F=0.0000*				*F(252,1 006)=4.32; Prob>F=0.0000*	

USA AD AGAINST UKRAINIAN METALLURGY

The purpose of this case-study was to verify the econometric results by the real case study and also for demonstrative purposes.

For the case-study we have chosen the United States International Trade Commission Anti-dumping Investigations Nos. 731-TA-989-908 "Hot-rolled steel products from Argentina, China, India, Indonesia, Kazakhstan, Netherlands, Romania, South Africa, Taiwan, and Ukraine". We paid special attention to the Ukraine case, although where it was appropriate made comparisons with other countries. The choice of this investigation was determined by the following factors:

This case is 'typical': metallurgy is most often targeted industry, USA is the major user of AD legislation, it is usual that several countries are examined together.

This case is 'recent': it started in late 2000 and final decision was made in the middle of 2001.

A large piece of information on this case was in author's abilities to obtain

For the purposes of clarity we organized the presentation of the case study as following: First we describe the usual procedures of AD investigation in US. Then we present the chronic of the case and major findings/results. Finally the most important features are described that relate to this paper's objectives, i.e. factors that determine AD use.

The procedures of antidumping investigation

According to the GATT-WTO standards and US AD legislation two major conditions should be satisfied for dumping to be proved:

1. Product price is set up below the cost of its production
2. Export of the product harms domestic production of the country-importer

The procedure of AD investigation is as follows:

1. Domestic enterprise or a group of enterprises apply for AD investigation of particular product's imports
2. The agencies (ITA and USITS in US) conducts AD investigation where two factors, both of which are necessary for affirmative conclusion, are under examination:
    a. Imports at 'less then fair value' (LTFV) price
    b. Injury to domestic industry by such imports

The following steps are made during an investigation:

1. The scope of investigation is defined
    a. The list of is defined taking into account physical conditions, end use, interchangeability, distribution channels, production process and employment conditions, producers and consumers views, and differences in prices
    b. The domestic industry and the list of enterprises are defined on the basis of sources and size of capital investments, value added, employment level, other factors
    c. The related parties are defined
2. The existing of dumping from importing producers
    a. Import price is defined based on 'best information available'
    b. Normal value is found based on methods differing for different countries under examination
    c. Dumping margin (if any) is calculated based on the above
3. The economic conditions of the industry and economic factors that influenced such indicators as output, sales, inventories, capacity utilization, market share, employment, wages, productivity, profits, cash flows, return on investments, capital formation ability, research activity
4. The material injury to domestic industry is defined taking into account the volume of imports under consideration and the influence of imports onto price formation at the market

The chronic of the case and major findings/results

On November 13, 2000, the Department of Commerce received petitions filed in proper form. The petitioners alleged that imports of certain hot-rolled carbon steel flat products is sold in the United States

at less than fair value, and that such imports are materially injuring an industry in the United States. The dumping margin calculated by the petitioners for Ukraine was from 85.20 to 86.68 percent. After the examination of the petitions on December 12, 2000 Import Administration of International Trade Administration's Department of Commerce initiated AD Duty Investigations: Certain Hot-Rolled Carbon Steel Flat Products From Argentina, India, Indonesia, Kazakhstan, the Netherlands, the People's Republic of China, Romania, South Africa, Taiwan, Thailand, and Ukraine. The scope of investigations was defined as follows:

The period of investigation (POI) for market economy countries is October 1, 1999, through September 30, 2000, while the POI for non-market economies (NME) is April 1, 2000, through September 30, 2000.

On December 4, 2000 the conference was held in Washington, DC, , and all persons who requested the opportunity were permitted to appear in person or by counsel.

In its preliminary investigation The Commission found that there is a threat of injury by imports sold below cost. The Commission recalculated estimated dumping margins and ranged them for Ukraine from 89.13 to 89.49 percent.

In its final report The Commission determined, that an industry in the United States is materially injured by reason of imports from China, India, Indonesia, Kazakhstan, Netherlands, Romania, Taiwan, Thailand, and Ukraine of hot rolled steel products, that have been found by the Department of Commerce to be sold in the United States at less than fair value (LTFV).

Commerce modified the dumping margins from its preliminary determinations. For Ukraine it was defined as 90.33 percent. The changes to the margins do not alter our conclusion that the domestic

industry producing hot-rolled steel is materially injured by reason of subject imports.

Most important features of the investigation

Initiation

It was stated in the report of the Commerce that the petitioners represent significant part of the industry which account for 20 enterprises – the fact that gives reason to presume that industry concentration is important factor of AD initiation as it is less costly to cooperate for fewer parties.

NME status of targeted economy is important for initioation of an investigation against it: that will be shown later in dumping investigation description that it is less costly to gather data and prove to ITC that NME dumps into US market. Of course this factor may be not decisive during the initiation phase.

The importance of an exporter's share in the market is reduced since it is not necessary that a single country-exporter possesses a significant share of the market: "Of the eleven countries subject to antidumping duty investigations, five are individually at negligible levels as determined by their respective shares of total imports: Argentina, 1.74 percent; Kazakhstan, 2.92 percent; South Africa, 2.19 percent; Thailand, 2.26 percent; and Ukraine, 2.69 percent. However, the sum of the shares of these countries, at 11.8 percent, exceeds the seven percent aggregate share for negligibility set by statute. Therefore … subject imports from none of these countries are negligible for purposes of the antidumping duty investigations". Correspondingly the Commission found the volume of cumulated subject imports, both in absolute terms and relative to consumption in the United States, to be significant.

Total import share is important: Much of the Commission's views focuses first on merchant market data (volumes that exclude captive production[15]) and secondly on total market data.

Injury is important for petitioners: as it will be seen from injury investigation description the injury to domestic industry (presented mainly by import volumes) is also a significant factor of AD initiation.

Dumping investigation

The assumptions on input prices were one of the major factors of dumping finding in this investigation: The petitioners based NV for sales in the Netherlands on Constructed Value (CV). The petitioners calculated CV using the same COM, depreciation, SG&A expenses, and interest expense figures used to compute the home market costs, that is practically took their own cost. The petitioners included in CV an amount for profit which was based on the profit of a surrogate Dutch equipment manufacturer. Based upon the comparison of EP to CV, the Commission recalculated the dumping margin for Netherlands.

It is both easier to file against NME and prove dumping during the investigation: it is stated that Ukraine is an NME country, and in all previous investigations, the Department has determined that Ukraine is an NME. Ukraine will be treated as an NME unless and until its NME status is revoked. The Department presumes, based on the extent of central government control in an NME that a single dumping margin, should there be one, is appropriate for all NME exporters in the given country. Because Ukraine's status as an NME remains in effect, the

[15] The captive production provision, 19 U.S.C. § 1677(7)(C)(iv), provides: (iv) CAPTIVE PRODUCTION -- If domestic producers internally transfer significant production of the domestic like product for the production of a downstream article and sell significant production of the domestic like product in the merchant market, and the Commission finds that --(I) the domestic like product produced that is internally transferred for processing into that downstream article does not enter the merchant market for the domestic like product, (II) the domestic like product is the predominant material input in the production of that downstream article, and (III) the production of the domestic like product sold in the merchant market is not generally used in the production of that downstream article, then the Commission, in determining market share and the factors affecting financial performance set forth in clause (iii), shall focus primarily on the merchant market for the domestic like product.

petitioners determined the dumping margin using an FOP analysis: Given that information regarding the Ukrainian mills' consumption rates is not available, the petitioners calculated NV using the following methodology: the petitioners used Indonesia as the surrogate country. For NV, the petitioners based the FOP, on the consumption rates of one U.S. hot-rolled steel producer, assumed, for purposes of the petition, that producers in Ukraine use the same inputs in the same quantities as the petitioners use petitioners argue that the use of the petitioners' factors is conservative because the U.S. steel industry is more efficient than the Ukrainian steel industry. The petitioners assert that Indonesia is the most appropriate surrogate country for Ukraine, claiming that Indonesia is: (1) A market economy; (2) a significant producer of comparable merchandise; and (3) at a level of economic development comparable to Ukraine in terms of per capita GNP. The materials were primarily valued based on Indonesian import values, as published in the UN Trade Commodity Statistics. Labor was valued using the regression-based wage rate for Ukraine provided by the Department. We have found that this rate is calculated as GNP per capita. Electricity was valued using the rate for Indonesia published in a quarterly report of the OECD's International Energy Agency. For overhead, SG&A expenses and profit, the petitioners applied rates derived from the public annual report of an Indonesian producer of subject merchandise, PT Krakatau Steel. All surrogate values which fell outside the POI were adjusted for inflation based on the currency in which the source data were reported. The Indonesian consumer price index or the PPI, as published by the International Monetary Fund's International Financial Statistics, was used for these adjustments. Based upon a comparison of EP to CV, the Commission recalculated estimated dumping margins ranging from 89.13 to 89.49 percent.

Injury

The importance of an exporter’s share in the market is reduced by the reasons explained in Initiation section: For purposes of the investigation, the Commission found the volume of cumulated subject

imports, both in absolute terms and relative to consumption in the United States, to be significant.

Prices dynamics: The Commission took into account that "cumulated subject imports have depressed domestic prices to a significant degree or prevented price increases, which otherwise would have occurred, to a significant degree".

Other factors: Capacity utilization rates (peaked in the first quarter of 2000 and have since fallen), orders (for the third quarter of 2000 were lower than for any other third quarter of the survey period), the domestic industry's share of both the merchant and total markets (was lower in interim 2000 than in interim 1999). One of the firms in bankruptcy before the filing of this petition, Gulf States, has ceased operations, and since this petition was filed, an additional firm, WPS, has also filed for bankruptcy – the facts that were definitely taken into account. The number of production and related workers fell in both 1998 and 1999.

Inventories increased sharply, rising from 2.5 million short tons in 1997 to 2.9 million short tons in 1999. At the end of interim 2000, inventories were nearly 3.0 million short tons, up from 2.8 million short tons in interim 1999. The ratio of inventory to shipments rose from 4.3 percent in 1997 to 4.9 percent in 1999.

The financial position of the industry was also named as a prove of the injury. It has deteriorated throughout most of the period under investigation. The number of firms reporting operating losses on commercial sales rose from 7 in 1997 to 12 in 1999. The industry reported operating losses on commercial sales in 1998 and those losses deepened in 1999.

From 1997 through 1999, even though the domestic industry's total sales quantities continuously increased, sales values decreased resulting in a decline in unit values per short ton over the period. Profits fell even as domestic producers made significant productivity

gains and unit production costs fell. Capital expenditures fell sharply between 1997 and 1999, as did expenditures for research and development.

Based on these facts the Commission found that the significant and increasing volume of low priced cumulated subject imports had a significant negative impact on the U.S. industry. Accordingly, the Commission determined that there was a reasonable indication of material injury by reason of subject imports.

CONCLUSIONS

The present study provides the result of an econometric analysis of the determinants of the claims and responsible authorities' decisions concerning antidumping investigations. Elements of the theory of political economy of protection, information gathered in different sources including case studies, economic articles, and communication with specialists in the field were used to develop econometric specification. Extended dataset used in the research allows testing of general hypotheses concerning AD investigations in modern world economy. We hope that our findings, which are summarized below, contribute to the better understanding of the recent tendencies in the international trade markets.

First, industrial support from the governments can be considered among the top reasons for the antidumping investigations as it leads to the unfair competitive advantages of the selected industries. From this prospective antidumping may be considered as a proper game rules enforcement mechanism.

Secondly, although WTO membership is considered as a good remedy from unjustified trade restrictions it may have two-fold effect on the newly accepted countries. On the one hand, it would definitely eliminate so-called traditional protectionism in the form of quotas and tariffs, which are more easily applied to non-members. On the other it is likely to expose member countries to the antidumping procedures, which serve as a protectionists measure of last resort. In this respect it would be unsound to believe that formal accession guarantees exporters' promotion per se. Improper domestic industries control and management would simply result in the substitution of tariffs and quotas by high affirmative decisions rate in antidumping suits.

Thirdly, while in absolute numbers antidumping investigations against transition economies may be indistinguishable from the rest of countries, probability of being accused in dumping is significantly higher for the former ones. This result justifies the statement that transition status leads to the higher flexibility in antidumping proceedings and resulting in the relatively higher discretionary decision-making.

The case study of US AD investigation against Ukrainian metallurgy gave us the possibility to make conclusions about AD procedure in USA in details. The major findings do not contradict our econometric analysis:

Among the factors that influence AD initiation are NME status of targeted economy, concentration of domestic industry, total import share

The assumptions on input prices were one of the major factors of dumping finding in this investigation. Additionally, it is both easier to file against NME and prove dumping during the investigation.

The injury decision is under the influence or a range of factors: prices dynamics, capacity utilization rates, number of orders, bankruptcy cases, the number of workers, inventories, the financial position of the industry.

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Appendix 1. Data Description[16]

Data sources

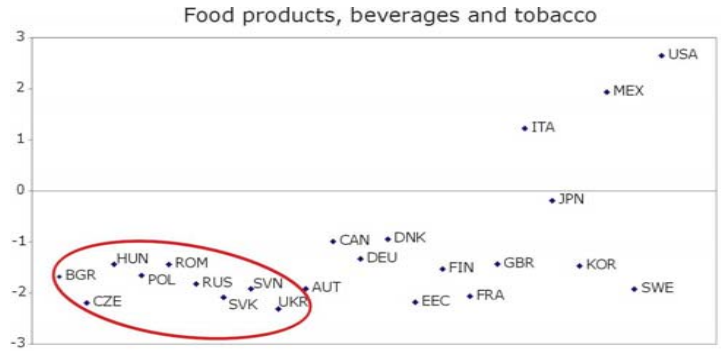
MAIN VARIABLES	SOURCE
• Number of AD initiations • Number of affirmative decisions • Number of dumping decisions	WTO semiannual reports. Electronic versions: www.wto.org (1995-99)
• Volume of subsidies (as % of GDP, country-level)	World development indicator CD (1999) Government Finance Statistics Yearbook. IMF edition, 2001.
• Average monthly gross wages in manufacturing (NACE classification)	Countries in Transition. WIIW Handbook of Statistics, 2001. STAN database, 2001.
• REER (country level)	IFS CD, 2001.
• WTO membership (country-level)	WTO website: www.wto.org
• Structure of production in manufacturing industry (% of total, NACE classification)	Countries in Transition. WIIW Handbook of Statistics, 2001. STAN database. 2001.
• Export/Import volume across manufacturing industries	STAN database, 2001 Economist Intelligence Unit (EIU), electronic version, 2001.
• Unemployment (country-level)	IFS CD, 2001. Economist Intelligence Unit (EIU), electronic version, 2001.
• Industrial production index	STAN database Countries in Transition. WIIW Handbook of Statistics, 2001.
• GDP growth (country-level)	IFS CD, 2001.
• Main trade partners with volumes of export/import transactions (country-level)	Economist Intelligence Unit (EIU), electronic version, 2001.

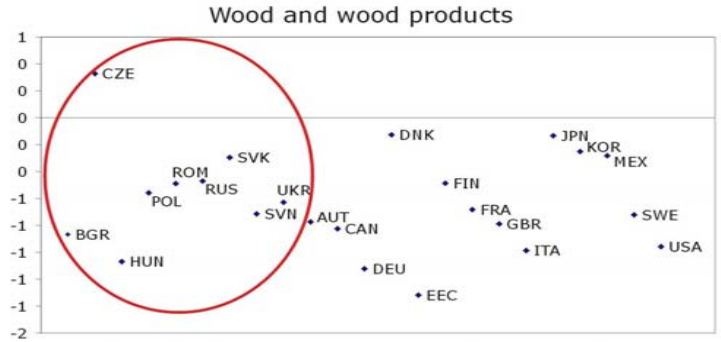
[16] Data is assumed to be industry-level if other is not mentioned.

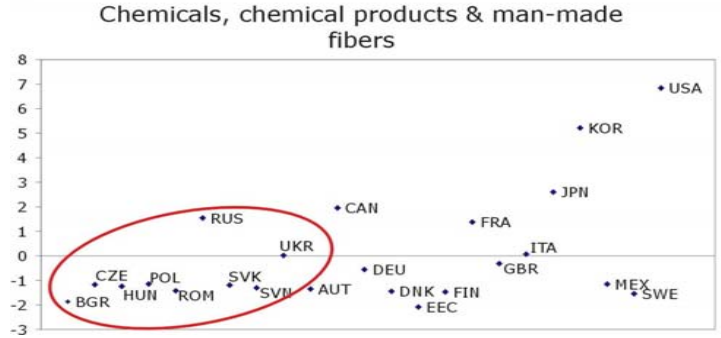
Summary statistics of the variables employed

VARIABLE	OBS	MEAN	STD.DEV.	MIN	MAX
NAD	1265	1.652174	5.067812	0	58
AF_NAD	1265	0.129833	0.279108	0	1
SR	1265	0.9909744	0.5581905	0.2374065	4.446398
LHW_D	1265	0.1328063	0.3394995	0	1
REERCH	1265	0.0292904	0.1255661	-.2932937	0.8839472
WTO	1265	0.8956522	0.3058321	0	1
TRANS	1265	0.3913043	0.4882353	0	1
TP_VAS	1265	0.0766666	0.0406788	0.0157811	0.2078225
TP_NEXP	1265	-1077.802	11778.17	-50612.66	39030.91
TP_UNEMP	1265	-1.73e-09	2.363509	-6.756098	5.083507
TP_REERCH	1265	0.0164351	0.0737144	-0.2587298	0.8839472
TP_IPI	1265	103.96	8.424362	77.5652	179.2001

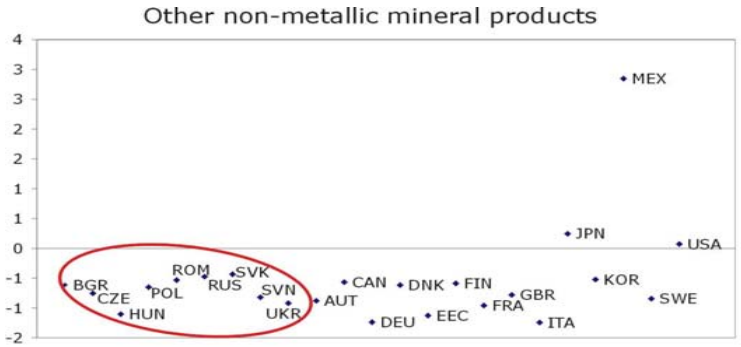
Appendix 2. Fixed effects

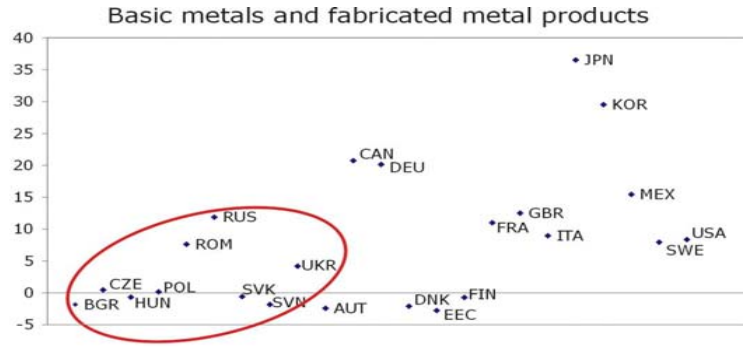


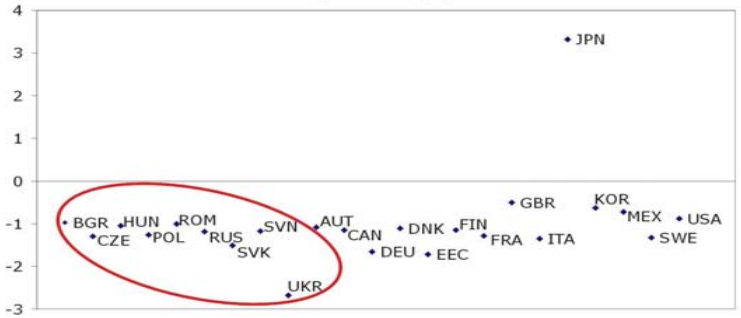


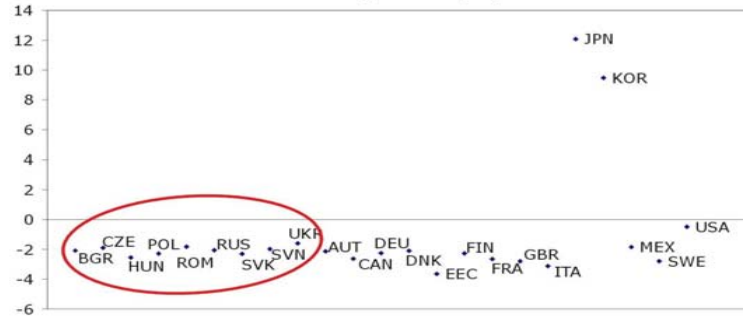


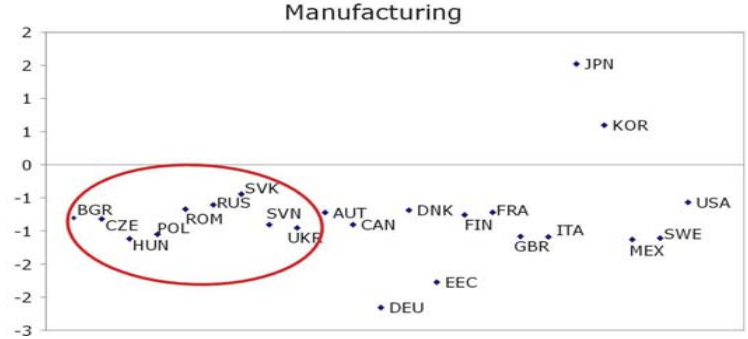
Appendix 2. Fixed effects (continue form the previous page)











Appendix 3. Country-level analysis

Although the ultimate target of the paper is analysis of the antidumping investigations determinants at industry level, more general approach using country-level data can be considered as a useful exercise. Such an analysis provides valuable information not only about appropriateness of econometric specification, but also about the behavior of main variables at higher level of data aggregation. Besides, double-check of the findings may serve as an additional test for the robustness of the obtained results. For these reasons we present brief outline of the econometric results obtained using country level dataset.

The model was represented by two major econometric specifications, which differ from the current analysis by the level of aggregation, quantity of variables to be tested, and a set of technical control variables:

$$NAD = f(WTO, TRANS, UNEMPL, SUBS, GNP\_PC\_G, RECESS, PROP\_DD, PROP\_PU, PROP\_GN, P\_AD\_DD, P\_AD\_PU, IMP) \quad (1)$$

and

$$AF\_TOT\_C = f(WTO, TRANS, UNEMPL, SUBS, GNP\_PC\_G, RECESS, PROP\_DD, PROP\_PU, PROP\_GN, P\_AD\_DD, P\_AD\_PU, IMP) \quad (2)$$

where the list of variables with definitions is presented below.

VARIABLE	D E S C R I P T I O N	S O U R C E
NAD	Number of antidumping investigations against exporting country in a particular year (1995-1999). Corresponds to N_{ad} in Methodology and preliminary results' Description of the variables	WTO Reports of the Committee on AD Practices 1995 - 1999
AF_TOT_C	Share of affirmative decisions out of NAD (affirmative decision means imposition of a definitive duty or price undertaking). Corresponds to AF/TOT in Methodology and preliminary results' Description of the variables	WTO Reports of the Committee on AD Practices 1995 - 1999
WTO	WTO membership of exporting country, dummy (1 – for WTO members, 0 – otherwise). Corresponds to VTO_Member in Methodology and preliminary results' Description of the variables	WTO
TRANS	Transition economies, dummy for exporting countries (1 for transition economy, 0 otherwise). Corresponds to Type in Methodology and preliminary results' Description of the variables	World Bank World Development Indicators
SUBS	Subsidies volume in exporting country as % of GDP. Corresponds to SV in Methodology and preliminary results' Description of the variables.	World Bank World Development Indicators
GNP_PC_G	Growth in GNP per capita in importing country, %. Corresponds to REC in Methodology and preliminary results' Description of the variables.	IMF: Government Financial Statistics
RECESS	Recession in importing country, dummy (1 if GDP growth is negative, 0 otherwise). Corresponds to REC in Methodology and preliminary results' Description of the variables.	Authors' calculation using the data from IMF: Government Financial Statistics

VARIABLE	D E S C R I P T I O N	S O U R C E
UNEMP	Unemployment in importing country, %. Corresponds to REC in Methodology and preliminary results' Description of the variables.	Bureau of Labor Statistics, International Labor Organization
IMP	Volume of imports of importing country from a particular affected country as % of GDP of importing country. Corresponds to IMV in Methodology and preliminary results' Description of the variables.	World Bank World Development Indicators
PROP_GN	Propensity of exporting country to dump, cumulative number of antidumping investigations against a particular country for 1995/1999. Corresponds to MADC in Methodology and preliminary results' description of the variables.	Authors' calculation using WTO data
PROP_DD	Propensity of exporting country to be subject to dumping decisions, average share of dumping decisions out of NAD for 1995/1999 across all importing countries.	Authors' calculation using WTO data
PROP_PU	Propensity of exporting country to be subject to price undertakings measure, average share of price undertaking decisions out of NAD for 1995/1999 across all importing countries.	Authors' calculation using WTO data
P_AD_DD	Propensity of importing countries to be engaged in AD investigation with resulting dumping decision, constructed as average share of dumping decisions made by importing countries out of total investigations initiated by the importing countries in 1995/1999.	Authors' calculation using WTO data
P_AD_PU	Propensity of importing countries to be engaged in AD investigation with resulting price undertaking decision, constructed as average share of price undertaking decisions made by importing countries out of total investigations initiated by the importing countries in 1995/1999.	Authors' calculation using WTO data

Several points worth noting:

The use of country-level data imposes some restrictions. Namely, the number of antidumping investigations against the country may depend heavily on the degree of its trade diversification; and the structure and the volumes of exported products may vary greatly from one importer to another. While these problems are less severe at industry level, one should account for such restrictions while interpreting the results of the quantitative analysis at country level.

Since all variable can be broadly divided into two categories: affected country's indicators and initiating country indicators, the method of representative importer construction was chosen. Under this transformation variables that refer to importing (initiating) countries are constructed by weighting by import volumes (from exporting to importing country) in the following way:

$$\sum_{j=1}^{M} AD_j = \alpha_0 + \alpha_1 E + \alpha_2 \left(\sum_{j=1}^{M} O_j * W_j \Big/ \sum_{j=1}^{M} W_j \right) + resid, \qquad (3)$$

where *AD* is the number of AD initiations, *E* is a vector of affected country parameters, *O* is a vector of initiating country parameters, and *W* is weight as defined above.

The data employed include 106 affected countries in 1995-99.

Methodology of propensity indexes calculation is briefly outlined in the Box 1 and results of econometric estimation is presented in the Table 6.

Box 1. Variables calculation methodology

PROPENSITY INDEXES CALCULATION METHODOLOGY

► $PROP\_DD = \frac{\sum_{i=1995}^{1999} DD_i}{\sum_{j=1995}^{1999} NAD_j}$, where DD_i is a total number of dumping decisions imposed against exporting country by all its trading partners and NAD_i is a total number of antidumping investigations against exporting country in a given year. Variable $PROP\_PU$ is constructed likewise for the price undertaking measures.

► $PROP\_GN = \sum_{i=1995}^{1999} NAD_i$, where NAD_i is total number of antidumping investigations initiated against exporting country by its trading partners in a given year.

► $P\_AD\_DD = \sum_{k=1}^{NTP} \left(\frac{\sum_{i=1995}^{1999} NDD_i}{\sum_{j=1995}^{1999} AD_j} \right) \Big/ NTP$, where NDD_i is the total number of dumping decisions imposed by a particular importing country in a given year, AD_j is the total number of antidumping investigations initiated by a given importing country in a particular year, and NTP is the total number of trade partners of an affected country for which the index is calculated. Variable P_AD_PU is calculated likewise for the price undertakings.

TABLE 6. Country-level estimation results

INDEPENDENT VARIABLES	DEPENDENT VARIABLES		
	NAD	AF_TOT_C	AF_TOT_C
WTO	-7.6627*	0.2395**	0.2219**
TRANS	3.3228***	0.2130**	0.1 973**
UNEMPL	0.3077**	-0.02895*	-0.0246*
SUBS	0.1302**	-	-
GNP_PC_G	-	-	-0.03498*
RECESS	-	0.3587*	-
PROP_DD	18.9631*	-	-
PROP_PU	-14.0393*	-	-
PROP_GN	-	0.0041*	0.0042*
P_AD_DD	-8.4401**	-	-
P_AD_PU	-19.2120	-	-
IMP	-	0.0053**	0.0059**
R-square	*0.5379*	*0.2538*	*0.2606*
F-statistic	*12.5155*	*7.0842*	*7.3421*
Prob. F-statistic	*0.000000*	*0.000002*	*0.000001*
Mean dependent var.	*4.3474*	*0.6019*	*0.6019*
S.D. dependent var.	*6.6521*	*0.4110*	*0.4110*
S.E. of regression	*4.7274*	*0.3635*	*0.3618*

** - significant at 1% level, ** - significant at 5% level, *** - significant at 10% level*

Results interpretation

As it can be seen from the table above, country-level analysis results almost perfectly correspond to the results of industry-level analysis. Namely, key indicators like WTO membership, transition status, unemployment level, subsidies volume, and growth proxy (especially if significant in both cases) do not differ in their signs. Difference in the statistical significance can be attributed to the different aggregation levels as well as dissimilar proxy variables used (like for the industrial support control variable). General compliance of the results obtained at different levels of data aggregation can be considered as evidence in favor of model chosen and robustness of the inferences made.